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RESEARCH

Pharmacy Student and Preceptor Impressions of Faculty Liaison Visits to Experiential Training Sites

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Objective. To characterize preceptor and student views about and experiences with faculty liaison visits to practice sites during clinical internships.
Methods. A survey was administered at the conclusion of each of the first 3 academic years of a new postbaccalaureate doctor of pharmacy (PharmD) program.
Results. Preceptors were satisfied overall with faculty liaison visits, while students initially were not; however, their perception increased in subsequent years. Students felt development of their patient care skills benefited, but less so their interpersonal communication skills. Each year, almost all preceptors indicated faculty liaison visits were helpful in developing and refining their mentorship skills.
Conclusion. Faculty liaison visits provided a valuable opportunity to interact and support preceptors and students during advanced pharmacy internships in a nascent PharmD program.
Keywords: pharmacy, faculty support, preceptor, clinical internship

INTRODUCTION

In the last decade, a number of Gulf Coast Corporation (GCC) countries experienced marked economic growth and devoted significant resources to augment provision of health services to their populations. It is anticipated that thousands of new health professionals will be needed across the region to support anticipated levels of care over the next 40 years.[1]

To meet these health care delivery needs, investment is underway within education sectors. As part of this enterprise, a number of branch campuses of foreign schools have been established (eg, Ireland's Royal College of Surgeons in Bahrain, Boston University Dental School in the United Arab Emirates (UAE), Weill-Cornell Medical School and Canada's University of Calgary Nursing School in Qatar). Such international partnerships reflect increasing standardization of health sciences education across borders and the desire to emulate perceived global leaders in this regard.[2-4]

A College of Pharmacy was established in 2007 at Qatar University's (QU) female campus as the first and only domestic pharmacy training opportunity for women in the country. As a national university, programs are offered at separate locations for male and female undergraduate students according to local traditions. While it is not a satellite college of another affiliate-university, as previously described, it is the first program to be internationally accredited by the Canadian Council for Accreditation of Pharmacy Programs (CCAPP), and, as such, students' training predominantly follows its North American criteria.[5]

In addition to a bachelor of pharmacy (BSc) degree, the entry-to-practice degree in Qatar, QU CPH introduced a postbaccalaureate graduate degree in advanced clinical pharmacy practice in fall 2011. The full-time doctor of pharmacy (PharmD) is a 36-credit progam open to BSc pharmacy graduates that includes 32 weeks (8 internships, each 4 weeks in duration) of experiential training with pharmacist mentors in Qatar. A part-time PharmD program study plan is also offered to pharmacists (female and male) graduating from outside pharmacy programs in Qatar. For this plan, the internship phase is preceded by as many as 25 additional credit hours, tailored for the individual student.

Doctor of pharmacy training supports an advanced pharmacy practice model whereby pharmacists are integrated members of the multidisciplinary care team who collaborate with other clinicians in the management of patients. Such pharmaceutical care may include

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patient chart review, patient interview and education, ordering and interpretation of laboratory tests, physical assessment, formulation of clinical assessments, development and implementation of therapeutic plans according to best available evidence, and patient follow-up to evaluate safety and effectiveness of drug therapy.[6] For PharmD students to acquire and practically develop these competencies in the graduate program curriculum, emphasis lies on the experiential components supervised by pharmacists who demonstrate pharmaceutical care in an advanced clinical practice.[7]

Until the advent of the QU CPH in 2007, all pharmacists working in Qatar acquired their qualifications abroad. As a result, the workforce is a heterogeneous population of professionals with diverse training and experiences.[8] Few possess advanced clinical pharmacy degrees or have mentored graduate students, and none have done so within a Canadian educational model. The QU CPH preceptors are nominated by their pharmacy directors because of their direct patient care responsibilities and for their potential to mentor students. A number of these individuals already participated as preceptors in the QU CPH undergraduate structured practice experiences in pharmacy (SPEP) rotations.

These novice, clinical, adjunct faculty members are highly motivated preceptors, but require reinforcement in the delivery of a North American-derived structured, advanced clinical internship. The PharmD program has therefore established a network of full-time, campus-based clinical pharmacy practice faculty liaisons, who coordinate internship site visits with preceptors. Faculty liaison visits are intended to support the supervision and evaluation of the graduate students through participation in a variety of activities including therapeutic discussions, student report of patient cases, attendance at student presentations, and bedside rounds.

The objective of this study was to characterize and compare advanced clinical internship preceptor and PharmD student experiences with faculty liaison visits over the 3 years since its implementation.

METHODS

We conducted a cross-sectional survey of advanced clinical internship preceptors and PharmD students at the conclusion of the program's first 3 academic years. During this time, 3 faculty members made 128 unique site visits in the 2011 academic year (AY11), 5 faculty members made 130 unique site visits in the 2012 academic year (AY12) and 6 faculty members made 118 unique site visits in the 2013 academic year (AY13). A questionnaire was developed following comprehensive review of English language literature to identify previously published research. Retrieved reports were evaluated by all members of the research team and relevant content was adapted. Two pharmacists with experience in survey development and familiarity with QU CPH undergraduate SPEP reviewed draft versions for face and content validity. The final questionnaire was ultimately comprised of 33 items (2 items added in years subsequent to 2011) encompassing respondent demographics, as well as broad domains assessing perceived quality and quantity of faculty support during site visits and subject preferences for and satisfaction with faculty liaison participation in internship activities.

All Qatar-based nonfaculty pharmacists who mentored PharmD students in the program's first 3 years and all enrolled PharmD students were invited to complete the questionnaire, formatted and administered electronically through SurveyMonkey (SurveyMonkey Inc., Palo Alto, CA). Data that could reveal respondent identity, such as location of employment and years precepting in the program, was not collected. Ethics approval was obtained through the QU Institutional Review Board.

Descriptive statistics were used to analyze findings using SPSS, v20.0 (SPSS Inc., Chicago, IL). Continuous data are reported as means and standard deviations and categorical data are calculated as frequencies. Questions soliciting levels of agreement on a 5-point scale in the original questionnaire (strongly agree, agree, neither agree or disagree, disagree, strongly disagree) were collapsed to a 3-point scale (all levels of agreement=agree, neither agree or disagree, all levels of disagreement=disagree) to simplify findings.

Annual preceptor and student response frequencies regarding preferred faculty liaison activities were compared using χ^2 tests, with an alpha of less than or equal to 0.05 considered significant. Pair-wise comparisons in overall faculty liaison visit satisfaction were determined against the baseline academic year. Logistic regression analysis was used to determine how the enrolled academic year and student perceived value of faculty liaison visits on development of student clinical skills and preceptor mentorship influenced overall faculty liaison program satisfaction.

RESULTS

From the 3 years, 66 (73%) advanced clinical internship preceptors and 30 (100%) PharmD students completed the survey. Baseline characteristics of responding preceptors are outlined in Table 1. More than half of preceptors possessed advanced pharmacy degrees, but only a small proportion trained as PharmD students themselves. Annually responding pharmacists had on average precepted 3 PharmD students in the academic year. Over the 3 years, an estimated mean number of 3-4 site visits were made to unique preceptors and ranged from 1 to 8.

Table 1. Baseline Characteristics of Responding Preceptors

Characteristic	AY11 N=28 n (%)	AY12 N=14 n (%)	AY13 N=24 n (%)
Female	10 (36)	4 (28)	9 (38)
Highest pharmacy degree obtained			
Baccalaureate	11 (40)	4 (29)	7 (29)
Masters	10 (36)	4 (29)	11 (46)
Doctorate (PhD)	1 (3)	1 (7)	0 (0)
Doctorate (PharmD)	6 (21)	5 (35)	6 (25)
Years in pharmacy practice			
≤ 5	2 (7)	1 (7)	4 (17)
5-9	9 (32)	5 (36)	7 (29)
10-14	7 (25)	3 (21)	10 (42)
15-19	5 (18)	3 (21)	1 (4)
≥20	5 (18)	2 (15)	2 (8)
QU PharmD students precepted mean* (SD, range)	3 (1-5)	3.1 (1.3, 1- 4)	2.7 (1.4, 1-5)
Estimated number of faculty liaison visits mean* (SD, range)	3 (1-8)	4.0 (1.6, 1-7)	2.8 (1.2, 1-5)

* In AY11, this response option was categorical; AY=academic year; QU=Qatar University

According to preceptors and students, the most common internship support activities involved in faculty liaison visits were faculty observation of formal therapeutic discussions and student report of patient cases to preceptor (Table 2). Faculty liaisons attending bedside rounds with students gradually decreased over time (100% in AY11 and AY12, 8% in AY13), as did student-reported faculty attendance at formal presentations (90% AY11, 54% AY13).

When asked their preferences for faculty liaison internship support, preceptors consistently favored observation of student report of patient cases and attendance at formal student presentations, as did the last cohort of students. In contrast, students in the first 2 academic years prioritized faculty facilitation of student report of patient cases, therapeutic discussions, and the communication between preceptor and student (Table 2).

Faculty liaison visits were considered valuable to the students' overall educational experience by the majority of preceptors (89% AY11, 93% AY12, 88% AY13) and the last 2 student cohorts (30% AY11, 100% AY12 and AY13). Students felt their patient care skill-development benefited from faculty liaison visits (40% AY11, 71% AY12, 77% AY13), but less so their interpersonal communication (20% AY11, 57% AY12, 46% AY13).

Each year, almost all preceptors indicated that faculty liaison visits were helpful in developing and refining their mentorship skills (Figure 1). In contrast, an overwhelming majority of students in AY11 did not agree. Most preceptors did not agree that faculty liaisons negatively interfered with their relationship with students (68% AY11, 79% AY12, 62% AY13). Most students (90% AY11, 86% AY12, 85% AY13) and many preceptors (75% AY11, 64% AY12, 62% AY13) agreed faculty liaisons should assume joint responsibility for completing the student evaluations.

The periodic visits by faculty liaisons to experiential training sites generated a reported increase in workload for both preceptors and students and were often difficult to schedule. Despite this, students each year expressed a desire for weekly visits (70% AY11, 100% AY12, 92% AY13) that lasted a half-day (AY11, AY12) or one hour (AY13). Preceptors preferred hour-long faculty liaison activities every other internship week (that is, twice per rotation).

In general, preceptors expressed greater satisfaction with faculty liaison site visits (86% AY11 and AY12 vs 92% AY13, NS) compared to students whose satisfaction increased significantly from the first year (30% AY11 vs 71% AY12, $p=0.12$, and 85% AY13, $p=0.01$). Direct logistic regression was performed to assess the impact per academic year of perceived value of faculty activities on student clinical skill development and of preceptor skill development on the likelihood that student respondents were satisfied overall with faculty liaison visits. However, none of these variables made a unique significant contribution to the model.

In AY13, practicing pharmacists enrolled in the part-time PharmD study joined the internship phase students for the first time. Apart from proportionately more of this student subgroup preferring joint faculty-preceptor internship evaluations, we found no differences in responses when compared to the full-time students that year, although the only 2 students dissatisfied with faculty liaison visits

Table 2. Actual Faculty Liaison Activities and Preceptor and Student Preferences

	Actual Faculty Liaison Activity, n (%)						Preferred Faculty Liaison Activity, n (%)								
	AY11		AY12		AY13		AY11			AY12			AY13		
	n=28 Preceptor	n=10 Student	n=14 Preceptor	n=7 Student	n=24 Preceptor	n=13 Student	n=28 Preceptor	n=10 Student		n=14 Preceptor	n=7 Student		n=24 Preceptor	n=13 Student	
Observe formal therapeutic discussions	24 (86)	8 (80)	11 (79)	7 (100)	15 (62)	12 (92)	20 (71)	4 (40)	NS	9 (64)	3 (43)	NS	8 (33)	8 (62)	NS
Lead formal therapeutic discussions	9 (32)	9 (90)	0 (0)	5 (71)	0 (0)	1 (8)	14 (50)	7 (70)	NS	2 (14)	7 (100)	<0.01	3 (12)	7 (54)	0.011
Attend bedside rounds	14 (50)	10 (100)	6 (43)	7 (100)	2 (8)	1 (8)	15 (54)	7 (70)	NS	7 (50)	6 (86)	NS	4 (17)	8 (62)	0.008
Observe student report of their patient cases	19 (68)	10 (100)	13 (93)	6 (86)	16 (67)	12 (92)	22 (79)	5 (50)	NS	10 (71)	3 (43)	NS	14 (58)	9 (69)	NS
Facilitate student report of their patient cases	8 (29)	4 (40)	5 (36)	3 (43)	6 (25)	2 (15)	12 (43)	8 (80)	0.048	5 (36)	7 (100)	0.007	9 (38)	5 (38)	NS
Attend student presentations	17 (61)	9 (90)	7 (50)	7 (100)	11 (46)	7 (54)	22 (79)	5 (50)	NS	13 (92)	3 (43)	0.025	18 (75)	9 (69)	NS
Provide orientation to student evaluation forms	5 (18)	2 (20)	1 (7)	1 (14)	3 (12)	3 (23)	11 (39)	4 (40)	NS	4 (29)	5 (71)	NS	8 (33)	4 (31)	NS
Provide guidance on completing evaluation forms	2 (7)	2 (20)	1 (7)	2 (29)	3 (12)	2 (15)	12 (43)	2 (20)	NS	3 (21)	6 (86)	0.016	8 (33)	2 (15)	NS
Reinforce feedback provided by preceptor to student	15 (54)	2 (20)	3 (21)	4 (57)	5 (21)	4 (31)	14 (50)	7 (70)	NS	7 (50)	7 (100)	0.047	8 (33)	7 (54)	NS
Facilitate communication between preceptor and student	6 (21)	4 (40)	3 (21)	4 (57)	5 (21)	3 (23)	13 (46)	8 (80)	NS	4 (29)	6 (86)	0.001	6 (25)	8 (62)	0.034

AY=academic year; NS=nonsignificant

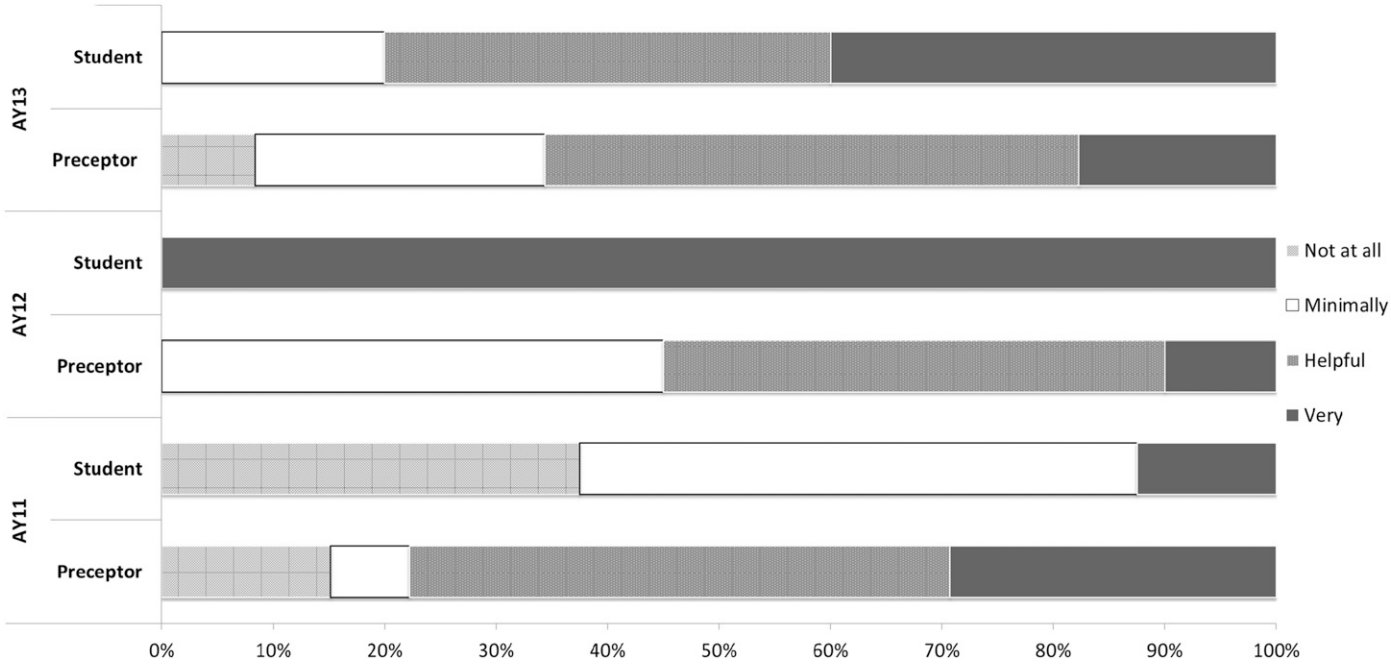

Figure 1. Perceived Benefits of Faculty Liaison Visits to Preceptor Skill Development.

were part-time PharmD students. In all survey years, both students and preceptors felt faculty liaison visits should continue in subsequent academic years for existing and new preceptors.

DISCUSSION

Our findings indicate that faculty involvement and collaboration with pharmacists at practice sites is desired and should continue in upcoming years for both new and existing preceptors. However, conflicting opinions were initially found between preceptors and students regarding perceived educational value of and overall satisfaction with faculty liaison visits. Preceptor and student preferences for faculty liaison activities were similar overall, but varied in terms of the faculty liaison's role. For example, both groups wanted liaisons to join therapeutic discussions, but preceptors described participation as "observation," whereas students more often requested "facilitation" (Table 2). In the early years of the program, students may have been disoriented when faculty members did not assume instructional roles consistent with those in their undergraduate experience.

Similarly, they may have been less familiar with the teaching style of the preceptor than that of the faculty liaison with whom they had already trained for 4 years. Students may also have perceived a loss of consistency in assessments when supervised by different advanced clinical internship preceptors each month. This may also explain why more students than preceptors thought faculty liaisons should have formally contributed to student evaluations. While faculty members should guide preceptors' familiarization with the assessment and feedback process and the evaluation tool for student performances, particularly for a novel program, the advanced clinical internship preceptor should nonetheless maintain autonomy when the graduate students. Thus, our faculty liaisons instead engaged in a "supervisory alliance" with the advanced clinical internship preceptor, emphasizing mutual respect.

More students than preceptors indicated faculty liaisons should facilitate communication between the 2 parties. In fact, because of confidentiality matters, both groups likely underestimated the amount of actual mediation between students and preceptors collectively carried out "behind the scenes" by the faculty liaisons throughout the year. As illustrative examples, a student came to the program director deeply concerned about a personality conflict with her preceptor. This student was advised regarding specific tactics for interactions and the situation was resolved without the mentor knowing. Conversely, preceptors complained to the program director about some students' inability to take initiative in medication reconciliation. These mentors were reminded that some students may have been mentored in earlier rotations with colleagues practicing at other care sites where medication reconciliation was not as comprehensive a practice.

Changes made to the program in response to student and preceptor feedback following the first year may have influenced changes in expectations and satisfaction in subsequent years. Students received more orientation

about the faculty liaison program including the anticipated roles of liaisons during site visits. The number of faculty participating as liaisons grew, allowing for more site visits per student. The additional formal pairing of a clinical faculty advisor with a PharmD student helped continue student skill development among the different preceptors and faculty members who made liaison visits throughout the academic year.

Similarly, the number of experienced preceptors in the program expanded over time. Existing pharmacist mentors continued to offer rotations, and newly appointed clinical faculty members assuming practice positions at internship sites and graduating PharmD alumni become preceptors. Moreover, faculty liaisons joining preceptors and students on bedside rounds decreased as familiarity with the internship practice environment and nature of interdisciplinary interactions with patients grew and as the faculty liaisons established their own clinical practices at the sites.

Little appears in the literature about how preceptors and students perceive value of and how frequently they desire visits by faculty members in programs where such partnerships exist. Bergett and colleagues underscored the need to recruit and retain quality advanced pharmacy practice experience sites and preceptors, with onsite faculty visits serving as an ongoing quality assurance measure.[9] In their study, experiential education faculty members made monthly site visits to review student rotation structure and processes and provide guidance to preceptors volunteering in its program. Separate discussions with students and preceptors, and joint meetings when appropriate, were described. Most of these 166 responding preceptors surveyed agreed that faculty visits met their needs (145, 87.6%) and added value to the students' educational experience (149, 89.5%). However, contrary to our findings, preceptors wanted visits no more than once a month, and near 30% only once a year. Student opinions were not solicited. Monthly faculty visits could be appropriate frequencies for a mature PharmD program with experienced preceptors but are likely insufficient for a new program such as ours. Faculty liaison visits in our PharmD program not only informed curricular improvement processes through observation and participation in rotation exercises, but promoted rapport and strengthened the communication network with our novice experiential training partners, which ultimately benefited the internship experience for the pharmacists and graduate students.[10]

While a paucity of data outlines activities faculty members should conduct during liaison visits to internship practice sites, enhanced collaboration between universities and clinical training sites is increasingly recommended to support pharmacy student practical experiences.[11-13] Lack of familiarity with course requirements, formal teacher training, experience as a mentor, and uncertainty regarding university expectations were among the self-reported weaknesses of pharmacy preceptors in previous studies.[12] Clear communication with the university was listed as a critical resource by these preceptors. It is necessary to acknowledge and address such feedback, given that pharmacy education is assuredly moving towards greater expansion of practical experiences.[13,14]

Accomplished clinicians do not automatically make expert teachers, and academic programs need to prepare and support pharmacist contributions to student learning through preceptorship.[15,16] Faculty liaison visits in our PharmD program offer the opportunity for regularly scheduled interaction with preceptors to review student progress, discuss program and site expectations, and share learning techniques and experiences. Perceived preceptor development from such partnership was evident as 70% of responding preceptors indicated faculty liaison visits helped in honing their preceptor skills.

Our experience contributes to the literature pertaining to clinical supervision within diverse cultural contexts, which will be increasingly required given the proliferation of international health education models.[17] Transfer and adoption of North American curricula, such as ours, into Arab cultures must take into account a number of issues, including the context of beliefs, practices, and needs of its Gulf-based students, and its Arab/Muslim patient base.[3] While the PharmD curricular package (didactic coursework and experiential training) is based on a "best practice" North American template with the intention to achieve similarly high-standard outcomes, the delivery must be structured in accordance with prevailing attitudes, beliefs, and cultural assumptions of the individuals and the society it serves, as well as the abilities of its mentors, namely the advanced clinical internship preceptors.[18] For example, in a non-Arab environment, faculty liaison roles to facilitate communication and constructive feedback between preceptors and students may not be as prevalent.

Preceptors in transitional countries like Qatar are facing competing demands of expanded scope of practice in addition to assuming new student teaching roles. While these redefined roles may be complementary, academic program leaders should work with preceptors to determine mechanisms to balance patient care responsibilities with educational needs.[19]

Limitations to our findings include responses potentially being subject to recall bias, especially for preceptors only participating in early rotations as the questionnaire is administered at the completion of the academic year.

Similarly, we did not ask students to prospectively record faculty liaison visit experiences over time. Fewer preceptors completed the survey in AY12, so views of nonparticipants may have contributed to overestimation of pharmacist satisfaction with faculty liaisons' activity. Despite overall high survey response rates supporting generalizability of our findings, the anonymous nature of submission precludes any assessment of nonresponders. Finally, the power of our statistical analysis is restricted as a result of the small student and preceptor samples.

CONCLUSION

Faculty liaison visits provide a valuable opportunity to interact and support pharmacist mentorship and student skill development during advanced pharmacy internships in a nascent PharmD program. This collaborative approach to experiential training is an important instrument to link schools with their practice-based partners as demand for clinician preceptors in pharmacy programs continues to grow.

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